WASHINGTON STATE INFORMATION SERVICES BOARD
Resource Document 300-R1

Early Warning Signs

Critical Indicators of Project Performance

Version 1.0
July 2010

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Introduction

Experience managing and overseeing many Information Technology (IT) projects in Washington State and elsewhere has taught us that there are several key success factors associated with these IT projects. Experience has also taught us that there is a set of warning signs associated with each of these success factors – signs that a success factor, and hence the overall project, may be in jeopardy. In this document, we describe the success factors and their associated warning signs as a guide to monitoring project performance.

This document is intended for use by executive leadership and project management to help assess the likelihood of success of a project while it is in progress.

Success Factors by Project Lifecycle

Project Phases →	Initiation	Planning	Execution	Closure	Maintenance & Operations
Success Factors	Pre-charter - Business case - Feasibility study - Decision package Charter - Project statement - Business drivers - Objectives - Scope - Schedule - Cost projection Project Organization - Roles & responsibilities - Governance - Team - Assumptions & constraints - Performance metrics	Project Plans (13) - Change management - Issue management - Risk management - Quality assurance - Scheduling & task - Staffing - Contractor management - Investment - Acquisition - Communications - Test - Implementation & transition - Training	Management Processes (14) - Change management - Issue management - Risk management - Quality assurance mgmt - Schedule & tasks mgmt - Staffing - Contractor management - Financial management - Communications mgmt - Status reporting - Meeting management - Test management - Implementation & transition - Training management	Post Implementation Review Lesons Learned Lessons Learned Staffing Transfer/Release Financial Closure Celebration/Recognition Project Archive	Legacy Decommissioning Maintanance & Operations Plan Change Management Plan
Executive Management Support					
User Involvement					
Experienced Project Manager					
Clear Business Objectives					
Minimized Scope					
Responsive Business Requirements Process					
Standard Infrastructure					
Formal Methodology					
Reliable Estimates					
Skilled Staff					
Contract Negotiation and Management					
Implementation					

Executive Management Support

The Executive Sponsor must have a global view of the project, set the agenda, arrange the funding, articulate the project's overall objectives, be an ardent supporter, be responsive, and finally, be accountable for the project's success. Warning signs include:

There is a lack of strong Executive Sponsorship. This is evidenced by any or all of the following:

- Inability to commit to and clearly articulate the project's business objectives.
- No commitment to regular attendance at executive steering committee meetings.
- Incomplete knowledge of the project's critical issues.
- Ineffective or no resolution of issues brought before the executive steering committee.
- Not knowing the status of the project at a high level.
- Multiple executive sponsors who are not all engaged to the extent needed.

Agency executives do not have experience managing the staff needed for a project of this size and complexity. This is evidenced by any or all of the following:

- Agency managers not understanding how the project methodology is implemented.
- Lack of staff awareness of project importance to the organization.
- Inability to commit to and clearly articulate the project's business objectives.
- Lack of an effective project communications plan, or one that is not tracked and updated as needed.

The project direction is not aligned with the strategic business objectives. This is evidenced by:

- An excessive number of process gaps identified during design.

The Executive Sponsor is unable to deliver the project as originally proposed. This is evidenced by any or all of the following:

- Significant changes in scope, schedule, or budget.
- Scope, schedule, or budget changes are not communicated in a clear and timely manner to project stakeholders.
- Lack of coverage for normal business operations.

The steering committee is ineffective. This is evidenced by:

- Major stakeholders not represented on the steering committee.
- Major stakeholders are not given the opportunity to provide meaningful input on issues that affect them.

User Involvement

Primary users must be involved in and support the project. They must have good communication skills that allow them to clearly explain business processes in detail to the IT organization. Primary users should also be trained to follow project management protocols. Finally, users must be realists - and aware of the limitations of the projects. Warning signs include:

Stakeholders do not have the information they need to provide meaningful input to the project. This is evidenced by any or all of the following:

- Communication plan not being followed.
- Users do not have a method to provide feedback on a regular basis.
- Not all required interactions are included in the communication plan; timing or target audience is insufficient.

Project has not scheduled sufficient time for users to understand and become comfortable and proficient with the new system. This is evidenced by any of all of the following:

- Requirements validation sessions do not review all processes.
- Training does not cover portions of the system the users need.
- Users do not understand their role in the testing because they have not received training on purpose structure of use cases or test scenarios.
- Testers do not have time to complete UAT or to retest defects that have been resolved.
- There are no effective forums (such as FAQs or brown bags) for users to ask questions of the “experts”.
- There is no effective organizational change management plan.
- Project underestimated the time needed for training preparation and actual training.

Experience Project Manager

Project managers must possess technology and business knowledge, judgment, negotiation, good communication and organization. The focus is on softer skills, such as diplomacy and time management. Warning signs include:

The project manager does not possess the appropriate skills to manage a project of this size and complexity. This is evidenced by any or all of the following:

- Lack of formal project management training.
- No previous experience with projects of similar size and complexity.
- Does not understand the proposed methodology.
- Communication style is not aligned with the agency's culture.
- Does not inspire confidence in management or staff.
- Cannot articulate the business objectives.
- Inability to delegate effectively.
- Focused on status reporting instead of managing the project.
- Too involved in the project details.
- Does not understand skill set and skill limitations of project staff.
- Does not understand need for transparency.
- Does not know what is important to communicate.

Clear Business Objectives

The project objectives must be clearly defined and understood throughout the organization. Projects must be measured against these objectives regularly to provide an opportunity for early recognition and correction of problems, justification for resources and funding, and preventive planning on future projects. Warning signs include:

The project does not have clear and agreed upon requirements. This is evidenced by any or all of the following:

- Inadequate or no feasibility study.
- Business stakeholder involvement was inadequate or too late in the process.
- No evidence of business sponsor approval of requirements.
- Too much focus on technology.

Business processes have not been identified or documented. This is evidenced by any or all of the following:

- Stakeholder participation is inadequate for identification of business processes.
- Project overanalyzes the business requirements and processes; result is inability to finalize requirements.
- The agency sees technology as the driver for organizational or process change.

The project direction is not aligned with the strategic business objectives. This is evidenced by:

- An excessive number of process gaps identified during design.
- Requirements are not traceable from the initiation phase through the execution phase, which includes user acceptance testing.
- Project formally accepts deliverable before testing is completed.

Minimized Scope

Scope must be realistically able to be accomplished within the identified project duration and measured regularly to eliminate scope creep. Warning signs include:

The project does not include adequate contingency to maintain the original scope or schedule. This is evidenced by any or all of the following:

- Required staff resources being removed from the project to address other agency needs.
- Project resource plan does not contain allowance for backfill or other non-assignable duties.
- An inordinate amount of contract amendments are processed.
- Early depletion of the change control budget.
- Project is given fixed scope, schedule, and budget resulting in no flexibility.

Responsive Business Requirements Process

Requirements management is the process of identifying, documenting, communicating, tracking and managing project requirements, as well as changes to those requirements. Agile Responsive requirements process is the ability to do requirements management quickly and without major conflicts. This is an ongoing process and must stay in lockstep with the development process. Warning signs include:

The project is operating under faulty assumptions that critical aspects of the business environment are stable. This is evidenced by any or all of the following:

- Change control processes are not being followed.
- Change control board is not in place.
- Change control participants do not understand their roles.
- Decisions frequently revisited.
- There is no legacy system freeze plan.

The project is failing to resolve issues in a timely manner. This is evidenced by any or all of the following:

- Project team does not escalate quickly, spends too much time trying to solve the problem.
- Lack of attention to issue resolution dates that are overdue.
- Executive sponsor not available to resolve issues in a timely manner.
- Decisions frequently revisited.

Standard Infrastructure

Establish a standard technology infrastructure that includes operational and organizational protocols. This infrastructure must be commonly understood and regularly assessed. Warning signs include:

Project did not incorporate all applicable state standards into the system design. This is evidenced by:

- Failure to engage appropriate state service providers early in the process for items such as:
  - Interfaces
  - Security
  - User authentication
  - Encryption
  - Network
  - Automated Clearing House (ACH)
  - Credit card processing

The project testing is ineffective. This is evidenced by any or all of the following:

- Project does not test in an environment that approximates the production environment.
- Converted production data is not used to test.
- Project team relies on manufacturer specifications rather than evaluating hardware performance of the existing environment.

The project did not consider all capacity requirements during planning. This is evidenced by any or all of the following:

- Project did not request application and security design reviews.
- Project did not coordinate with the Integration Competency Center.
- Server hardware and software functionality and specifications were not verified before formal acceptance.
- Project makes use of unfamiliar technology and does not include adequate contingency for resolution of unusual and unforeseen technology issues.

Formal Methodology

Following a formal methodology provides a realistic picture of the project and the resource commitment. Certain steps and procedures are reproducible and reusable maximizing project-wide consistency. Warning signs include:

The project does not use the formal methodology proposed or planned, or there is no methodology. This is evidenced by any or all of the following:

- Required staff resources being removed from the project to address other agency needs.
- Project team members are not trained and supported in a timely manner on the methodology.
- Artifacts are not readily available to all management and staff.
- Artifacts are not updated in a timely manner.
- Project status is not communicated correctly to all levels of the project team.
- The project is not organized in a way that provides interim value to the agency or the state.
- Estimates are not effectively validated.
- The project manager is not able to measure and report status accurately.
- The agency does not understand the ramifications of selecting one methodology versus another.
- Necessary management plans are not in place.
- Management plans are not revisited on a recurring basis.
- The methodology changes without adequate forethought, planning, and justification.
- Project's approaches to address QA findings are inadequate.
- Process is inadequate for validating project readiness to proceed past current phase.

Reliable Estimates

Be realistic in the estimates for resources, time, budget, and scope. Warning signs include:

The estimates for schedule and budget are unreliable. This is evidenced by any or all of the following:

- Staffing and budget are not adjusted when the methodology changes.
- The agency has a history of significantly underestimating the resources needed to complete a project within scope, schedule, and budget.
- The vendor has a history of multiple engagements in Washington State where they significantly underestimated the resources needed to complete a project within scope, schedule, and budget.
- A proposed change to project schedule or budget does not reflect additional contingency that should be needed due to the lack of accuracy of past estimates.
- The project scope, schedule, or budget has not changed although a significant interim milestone was missed.

Skilled Staff

Properly identify the required competencies, the required level of experience and expertise for each identified skill, the number of resources needed within the given skill, and when these will be needed. Ensure these resources are available and assigned to the project. Soft skills are equally important when identifying competencies. Warning signs include:

The project staff does not possess the skills necessary for the project, or the availability of staff is inadequate. This is evidenced by any or all of the following:

- The project manager does not have the necessary skills to manage a project of this size and complexity.

Project staff are not effectively supervised. This is evidenced by any or all of the following:

- Reporting relationships are unclear.
- Staff report to multiple supervisors or managers (matrix relationships).
- Project managers and team leads have supervisor roles; takes time away from PM activities.

Knowledge transfer is inadequate between agency and contractor. This is evidenced by any or all of the following:

- Vendor does not integrate state staff into all development and configuration activities.
- The WBS does not include adequate time for knowledge transfer.
- Knowledge transfer tasks are listed at the end of the project schedule.
- There is no method for evaluating the efficacy of knowledge transfer.
- Vendor expects state staff to be adequately trained immediately after contract execution.
- Core project team has not been identified by the time the acquisition document is released.
- Vendor is unable to provide skill profile or training requirements to the agency in advance of when the skill set is needed.
- The state staff does not have adequate time to achieve the base of knowledge necessary to be effective on the project.

Contract Negotiation and Vendor Management

The Standish Group did not identify this as a success factor; however, based on lessons learned from Washington State projects, contract negotiation and management plays a major role in project outcomes. Warning signs include:

Contract negotiation or management of the vendor is inadequate or ineffective. This is evidenced by any or all of the following:

- QA not an active participate in contract negotiations.
- Agency negotiator does not have the experience in negotiating contracts of this scope or complexity.
- Agency does not understand which positions it is willing to negotiate away and why.
- Agency does not understand which terms are required.
- SOW does not have adequate, clearly defined, measureable indicators of completion.
- SOW is not used as a management instrument by the PM.
- Roles and responsibilities are not adequately defined.
- Agency assumes the vendor's responsibilities in order to meet a major deliverable.
- The SOW does not include responsibility to comply with state policies and standards.
- Contract does not reflect the business goals of the organization; it deals more with protecting the state against the risks of legal action.

Implementation

The Standish Group did not identify this as a success factor; however, based on lessons learned from Washington State projects, implementation plays a major role in project outcomes. Warning signs include:

Project does not have a well defined transition to implement the product. This is evidenced by any or all of the following:

- Implementation plan does not include new or modified processes for agency help desk to interface with vendor support.
- Agency users do not know how to request help once system is implemented.
- Help desk is not adequately staffed for the volume or complexity of calls received at Go-Live.
- Agency has not identified maintenance and operations funding for the continued support of the system.